

42390P11803

PATENT

CLAIM AMENDMENTS:

1. (Currently amended) A statistical dialog system, comprising:
 - a speech understanding mechanism for determining the literal meaning of input speech data;
 - a dialog semantics learning mechanism for establishing semantic models based on annotated dialog training data, said the annotated dialog training data associating literal meaning of input speech data with one or more semantic meanings of the input speech data; and
 - a statistical dialog manager for interpreting one semantic meaning of the input speech data based on both the literal meaning of the input speech data and corresponding semantic models that are associated with the literal meaning of the input speech data.
2. (Original) The system according to claim 2, wherein the speech understanding mechanism comprises:
 - a speech recognition mechanism for recognizing a word sequence from the input speech data based on at least one acoustic models; and
 - a language understanding mechanism for understanding the literal meaning of the word sequence based on a language model.
3. (Original) The system according to claim 1, further comprising a responding mechanism for generating at least one response to the input speech data based on the semantic meaning of the input speech data.
4. (Currently amended) The system according to claim 3, wherein said the responding mechanism includes:
 - a voice response mechanism for generating a voice response to the input speech data based on the semantic meaning of the input speech data; and
 - an action response mechanism for activating an action corresponding to the semantic meaning of the input speech data.

42390P11803

PATENT

5. (Currently amended) The system according to claim 4, wherein said the voice response mechanism comprises:

a language response generation mechanism for generating a language response to the input speech according to the semantic meaning of the input speech data; and
a text to speech engine for synthesizing the voice of the language response to generate said the voice response.

6. (Please cancel Claim 6 without prejudice)

7. (Please cancel Claim 7 without prejudice)

8. (Currently amended) A system, comprising:

a semantic model retrieval mechanism for retrieving, from a semantic model storage, semantic models that are associated with a literal meaning of input speech data; and
a dialog semantic understanding mechanism for interpreting, during a dialog session, the semantic meaning of the input speech data according to said the semantic models and said an environmental status.

9. (Currently amended) The system according to claim 8, further comprising:

an environmental status access mechanism for accessing the environmental status that affects the interpretation of the semantic meaning of the input speech data, said the environmental status being used, together with the semantic models, by the dialog semantic understanding mechanism to interpret the semantic meaning of the input speech data; and

a dialog data annotation mechanism for annotating the relationship between said the literal meaning of the input speech data and the semantic meaning of the input speech data based on the dialog session to generate feedback dialog data.

10. (Currently amended) A method, comprising:

receiving, by a statistical dialog system, input speech data;

42390P11803

PATENT

determining, by a speech understanding mechanism in the statistical dialog system, the literal meaning of the input speech data;
retrieving at least one semantic model associated with the literal meaning of the input speech data, said the at least one semantic model associating the literal meaning with at least one semantic meaning of the input speech data;
interpreting, by a statistical dialogue manager in the statistical dialogue system, the semantic meaning of the input speech data based on the literal meaning of the input speech data and the at least one semantic model; and
generating a response to the input speech data based on the semantic meaning of the input speech data.

11. (Currently amended) The method according to claim 10, wherein said determining the literal meaning further comprises:

recognizing, by a speech recognition mechanism, a word sequence from the input speech data based on at least one acoustic model; and
generating, by a language understanding mechanism, a literal meaning of the input speech data from the word sequence based on a language model.

12. (Currently amended) The method according to claim 10, wherein said generating a response further comprises includes at least one of:

generating, by a voice response mechanism, a voice response to the input speech data based on the semantic meaning of the input speech data; and
generating, by an action response mechanism, an action response to the input speech data according to the semantic meaning of the input speech data.

13. (Currently amended) The method according to claim 12, wherein said generating a voice response further comprises:

producing, by a language response generation mechanism, a language response according to the semantic meaning of the input speech data; and
synthesizing, by a text to speech engine, the voice of said the language response to generate said the voice response.

42390P11803

PATENT

14. (Please cancel Claim 14 without prejudice)

15. (Please cancel Claim 15 without prejudice)

16. (Original) A method for a statistical dialog manager, comprising:
receiving, from a speech understanding mechanism, a literal meaning corresponding to
input speech data;
retrieving, from a semantic model storage, at least one semantic model associated with
the literal meaning of the input speech data; and
interpreting, by a dialog semantic understanding mechanism, the semantic meaning of the
input speech data based on the literal meaning of the input speech data and the at least
one semantic model.

17. (Currently amended) The method according to claim 16, wherein said-interpreting
the semantic meaning further comprises:
determining at least one semantic meaning of the input speech data according to the
literal meaning and the at least one semantic model; and
confirming, based on the at least one semantic meaning of the input speech data, the
semantic meaning associated with the literal meaning in a dialog session.

18. (Currently amended) The method according to claim 17, further comprising:
accessing environmental status that affects the interpretation of the semantic meaning of
the input speech data, said the environmental status being used, together with the at least
one semantic model, by said the interpreting to generate the semantic meaning of the
input speech data; and
annotating, by a dialog data annotation mechanism, the relationship between said the
literal meaning of the input speech data and the semantic meaning of the input speech
data, confirmed during the dialog session, to generate feedback dialog data.

42390P11803

PATENT

19. (Currently amended) A computer-readable medium encoded with a program that, said program, when executed by a computer, causes the computer to comprising:
receiveing, by a statistical dialog system, input speech data;
determineing, by a speech understanding mechanism in the statistical dialog system, the literal meaning of the input speech data;
retrieveing at least one semantic model associated with the literal meaning of the input speech data, said the at least one semantic model associating the literal meaning with at least one semantic meaning of the input speech data;
interpreting, by a statistical dialogue manager in the statistical dialogue system, the semantic meaning of the input speech data based on the literal meaning of the input speech data and the at least one semantic model; and
generateing a response to the input speech data based on the semantic meaning of the input speech data.

20. (Currently amended) The medium according to claim 19, wherein the program, when executed by the computer, further causes the computer to said determining the literal meaning by comprising:
recognizing, by a speech recognition mechanism, a word sequence from the input speech data based on at least one acoustic model; and
generating, by a language understanding mechanism, a literal meaning of the input speech data from the word sequence based on a language model.

21. (Currently amended) The medium according to claim 19, wherein the program, when executed by the computer, further causes the computer to said generating a response includes by one or more of at least one of:
generating, by a voice response mechanism, a voice response to the input speech data based on the semantic meaning of the input speech data; and
generating, by an action response mechanism, an action response to the input speech data according to the semantic meaning of the input speech data.

42390P11803

PATENT

22. (Currently amended) The medium according to claim 21, wherein the program, when executed by the computer, further causes the computer to said generating a voice response by comprising:

producing, by a language response generation mechanism, a language response according to the semantic meaning of the input speech data; and
synthesizing, by a text to speech engine, the voice of said the language response to generate said the voice response.

23. (Please cancel Claim 23 without prejudice)

24. (Please cancel Claim 24 without prejudice)

25. (Currently amended) A computer-readable medium encoded with a program for a statistical dialog manager, said the program, when executed by a computer, causing the computer to comprising:

receiveing, from a speech understanding mechanism, a literal meaning corresponding to input speech data;
retrieveing, from a semantic model storage, at least one semantic model associated with the literal meaning of the input speech data; and
interpreting, by a dialog semantic understanding mechanism, the semantic meaning of the input speech data based on the literal meaning of the input speech data and the at least one semantic model.

26. (Currently amended) The medium according to claim 25, wherein the program, when executed by the computer, further causes the computer to said interpreting the semantic meaning by comprising:

determining at least one semantic meaning of the input speech data according to the literal meaning and the at least one semantic model; and
confirming, based on the at least one semantic meaning of the input speech data, the semantic meaning associated with the literal meaning in a dialog session.

42390P11803

PATENT

27. (Currently amended) The medium according to claim 26, wherein said the program, when executed by the computer, further causes the computer to comprising: accessing environmental status that affects the interpretation of the semantic meaning of the input speech data, said the environmental status being used, together with the at least one semantic model, by said during the interpreting to generate the semantic meaning of the input speech data; and
annotateing, by a dialog data annotation mechanism, the relationship between-said the literal meaning of the input speech data and the semantic meaning of the input speech data, confirmed during the dialog session, to generate feedback dialog data.